Monthly Progress Report
Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)
February 2000

This report summarizes Los Alamos National Laboratory (LANL) activities that were completed during February of fiscal year (FY) 2000 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918)], which was submitted to the New Mexico Environment Department-Hazardous and Radioactive Materials Bureau [NMED-HRMB] on 9/30/98, and approved by NMED-HRMB on 9/8/99), and other related activities are described herein.

Description of Activities and Contacts

High Performing Team (HPT) Activities – The 260 HPT met on February 16, 2000. LANL representatives outlined the baseline activities and schedule for the entire 260 outfall project. Goals of the HPT for the upcoming year were formulated. A discussion of Citizens Advisory Board involvement with the HPT was held. A regular meeting time of the first Monday of each month was determined. The next meeting will be March 6, 2000.

RCRA Facility Investigation (RFI) Report and CMS Plan– During the high-performing team (HPT) meeting on February 16, 2000, NMED representative indicated that they would probably send out a letter of clarification rather than a request for supplemental information on the CMS Plan Addendum.

Best Management Practices (BMPs)–BMPs were inspected weekly during February . The BMPs were in good condition. All of these BMPs, including straw bales, diversion dams, and diversion piping, have been designed to minimize run-on and runoff from the contaminated outfall area.

CMS Hydrogeologic Investigations–CMS hydrogeologic investigations include ongoing Phase II RFI sampling as well as continuing investigations outlined in the CMS plan.

The field activities included sampling the Sanitary Wastewater System Consolidation (SWSC) Spring, Burning Ground Spring, and Martin Spring every other day for bromide, other anions, and stable isotopes. The analyses from the February sampling are in process. No new bromide breakthrough has been observed in samples to date. The flow in SWSC spring is at a very low level. One-week and one-month flow integrated samples were collected and submitted for laboratory analysis.

The wells, both alluvial and deep, were checked weekly for water level and presence of water. Four of the five alluvial wells contained water; the exception was still alluvial well 2655, which is located in the steam plant drainage. None of the intermediate-depth boreholes contained water.

In February, no samples from precipitation events were collected because there was no significant rainfall or snow.

At the plume chasing well, CdV-R-15-3, site preparation (including fencing), field deployment of the trailer to the site, and jack cellar excavation were completed. During excavation of the jack cellar several pieces of debris (a hot water tank, angle iron, signs) were found, including less than 1 lb. of asbestos on the hot water tank. Work was stopped, the SSHASP was modified, and the asbestos was properly removed and disposed. HE spot tests and rad surveys revealed no additional contamination. The site was evaluated to determine whether a new area of concern (AOC) needed to be created. LANL personnel contacted HRMB personnel to describe the situation. Currently there is no plan to create a new AOC. Plans to provide power and other utilities to the site continued to be developed. The site is now ready for commencement of drilling.

Ecological Risk Pilot–

A second briefing was held in which ecological risk screening results were reviewed by the ER Ecorisk Task Leader. Work is progressing to document the revised screening results, develop the assessment approach to go forward from the screening results, and to present the results into a form that will be useful for sharing with NMED during an oral presentation.

CMS Bench and Pilot Studies–Bench and pilot studies continued in collaboration with the Innovative Treatment Remediation Demonstration (ITRD) Program. The ITRD HE program is focused on two DOE sites: LANL and Pantex. Five studies are now ongoing under the auspices of ITRD, all of which may benefit the PRS 16-021(c) CMS:

1. A study of the passive barrier technology of Stormwater Management, Inc., which is potentially useful for removing HE and barium from waters. Water from Cañon de Valle is being used in the study.
2. A study of chemical treatment of HE-contaminated soil using zero-valent iron (ZVI). This is being completed by the University of Nebraska/H&H Ecosystems using PRS 16-021(c) soil. This soil was taken from a moderately contaminated location within PRS 16-021(c) and, based on analytical results, does not constitute a RCRA-regulated hazardous waste.
3. A study of in situ anaerobic bioremediation of HE using gas-phase carbon additions. This study is being completed by Idaho National Engineering and Environment Laboratory (INEEL), together with Texas Tech University, using Pantex soil and a Pantex field site.
4. A study of ex situ anaerobic bioremediation of Pantex soils using the W. R. Grace process, which combines anaerobic bioremediation with a ZVI treatment.
5. A study of HE composting. Amendments appropriate to northern New Mexico are being tested on clean soils.

Regarding the first study, LANL representatives and Jim Phelan of Sandia National Laboratory (SNL) met with Surface Water Bureau (SWB) and Army Corps of Engineer

personnel to discuss 401/404 issues on February 2, 2000. There do not appear to be any insurmountable roadblocks associated with deployment of a Stormwater Management system in Cañon de Valle, SWB personnel expressed a preference for this deployment to occur in a spring, rather than in the Cañon de Valle stream channel. Engineering designs of both options will be developed by SNL.

Regarding the second study, the University of Nebraska/H&H Ecosystems study of ZVI remediation in building TA-16-224 was demobilized. Samples for laboratory analysis are pending. The process appears to have been effective for RDX and TNT but ineffective for HMX.

No new results were received on the third or fourth studies.

Regarding the fifth study, due to the equivocal results from the ZVI pilot test for HMX, LANL and ITRD personnel have decided to implement a series of tests of HE composting as a replacement for the ZVI process. Further investigation of the availability of appropriate amendments were made. A brief pilot study plan was written. Required paperwork such as SSHASP modifications was completed.

Interim Measure **(IM)** – The facility tenant agreement was finalized. The IT field team deployed to the site on February 18, 2000. Site preparation activities were initiated working weekends only. These included: clearing trees for staging areas, collecting screening samples to delineate areas requiring blending, and building wood berms around the staging areas.

The 401/404 approval was received on February 29, 2000. The 401/404 will allow fieldwork activities to proceed. Some of the conditions of this 401/404 approval are quite burdensome and will be discussed with Surface Water Bureau representatives on March 17, 2000.

The IM Plan was submitted to NMED on February 11, 2000.

Public and Stakeholder Involvement– There were no public or stakeholder involvement activities during February 2000.

Percentage of CMS Completed

LANL estimates that 47% of the CMS has been completed to date. Note that this percentage does not reflect the deep wells that will be drilled per the CMS plan addendum.

Problems Encountered/Actions to Rectify Problems

CMS Hydrogeologic Investigations

Problem (1) The lack of a completed well at R-25 remains a significant concern to the TA-16-260 team.

Problem (2) The change from mud drilling to casing-advance air rotary drilling of deep borehole CdV-R-15-3 raised significant logistical issues related to drilling the borehole. LANL does not currently have access to sufficient drill rigs and drill string to support parallel completion of two deep (greater than 1000 ft) wells.

Action to Rectify Problem (1): The screens have been installed and the well has been purged. The well is now being readied for Westbay installation.

Actions to Rectify Problem (2): The drilling support facility is investigating three possible actions to speed drilling the deep boreholes: (1) drilling during two daily shifts rather than one; (2) obtaining additional drill string; and (3) procuring an additional dual air rotary rig. All of these options are being pursued.

CMS Bench and Pilot Studies

Problem (1) The ZVI pilot test did not work effectively for HMX. The additional ZVI added during November did not significantly improve breakdown for HMX.

Action(s) to Rectify Problem (1). Composting is being investigated in place of ZVI.

IM

Problem (1) Several regulatory issues still need to be resolved prior to implementation of the IM.

Problem(2) Delays at MDA-P will delay availability of the remote excavator. This will delay portions of the IM.

Action(s) to Rectify Problem (1) LANL is meeting frequently with NMED representatives to solve these regulatory issues..

Action(s) to Rectify Problem (2) LANL will wait until the remote excavator is available.

Key Personnel Issues

None.

Projected Work for March 2000

RFI Report and CMS Plan

- No work is scheduled for this month.

Best Management Practices (BMPs)

- Inspection of existing BMPs following significant precipitation events will continue. The zero discharge BMP will be installed to support the IM. Other BMPs will be demobilized to allow access to the soils for the IM.

CMS Hydrogeologic Investigations

- Continued bromide sampling of springs.
- Weekly sampling for presence of water and associated water levels in alluvial and deep wells.
- Sampling of flow-integrated ISCO samplers.
- Continued precipitation monitoring and sampling for stable isotopes.
- Data analysis

Ecological Risk Pilot

- Work to-date is being documented.
- Preparations are underway for a Problem Formulation meeting with NMED.
- Additional literature work is ongoing to develop ecological risk screening values.
- National Ambient Water Quality Criteria are being evaluated for relevance to Cañon de Valle by reviewing the species used to calculate the criteria.

CMS Bench and Pilot Studies

- Modification of Stormwater Management pilot design.
- Continuation of composting tests on HE-bearing materials.
- Initiation of study designs for stabilization and phytoremediation.

IM

- Site preparation activities.
- Completion of zero-discharge BMP

- Removal and staging of low-level HE contaminated soils from lower and upper drainages

Public and Stakeholder Involvement

- No public or stakeholder involvement activities are anticipated for March 2000. There will be a general ER availability session on March 15, 2000.